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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/692,846	10/19/2000	Courtney C. Konopka	66161	6249
22242	7590	10/18/2006	EXAMINER	
FITCH EVEN TABIN AND FLANNERY 120 SOUTH LA SALLE STREET SUITE 1600 CHICAGO, IL 60603-3406			SPOONER, LAMONT M	
			ART UNIT	PAPER NUMBER
			2626	

DATE MAILED: 10/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/692,846	KONOPKA ET AL.	
	Examiner	Art Unit	
	Lamont M. Spooner	2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 24 July 2006.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-17,26-30 and 32-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-17,26-30 and 32-44 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 19 October 2000 is/are: a) accepted or b) objected to by the Examiner. Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) Notice of Informal Patent Application
- 6) Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 1/17/06 have been fully considered but they are not persuasive.
2. In response to Applicant's arguments, filed 7/24/06, page 10, "Geilhufe reference does not teach or suggest switching to a second context to search for an open-ended user request. The second context includes a second set of models, grammars, and lexicons". The Examiner cannot concur.

Geilhufe teaches, C.18.lines 47-58, of an open-ended user request. The Examiner notes, "Aardvark Call Mom" is completely within the scope of an open-ended user request. The Examiner further notes, that the personal name of Aardvark-employs it's own grammar, lexicon and model of device names-which is inherently and undeniably a context, wherein the user must supply the word Aardvark-wherein in the context is interpreted as the application determination, secondly, the context is inherently switched to a second context (or topic) directly relating to the open ended user request, this second context employs only thereafter a second grammar, model and lexicon which it accesses after the keyword "Aardvark" is determined, see

also column C.20.lines 54-57 “After supplying the appliance name, a user is granted access to further commands of the standard VUI operating on the voice controlled device at 601.” The Examiner cannot discern a difference between the claimed invention and Geilhufe, as broadly claimed.

In response to applicant’s arguments regarding claim 1, the Examiner notes, the claim states “wherein the natural language interface module is for operating a plurality of devices of one or more types”, which is interpreted as at least two devices of the same type or different types, wherein Junqua provides a natural language interface module, see previous rejection, his natural language parser, C.2.lines 52-61, C.3.lines 9-17, C.31-35, and Fig. 1, with a plurality of devices, see Fig. 1 his digital tuner and recorder-which is sufficient for disclosure of a plurality of devices of the same type or different types, wherein the user simply “speaks into the system and the speech recognizer, natural language parser...carry out the user’s wishes” with respect to the recorder and digital tuner.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claim 17 is rejected under 35 U.S.C. 102(e) as being anticipated by Geilhufe et al. (Geilhufe, US 6,584,439)

As per claim 17, Geilhufe teaches a method of speech recognition comprising:

searching for an attention word based on a first context including a first set of grammar models (C.18.lines 47-58-his “Aardvark” as the attention word, the first set of grammar model recognizes attention words); and

switching upon finding the attention word to a second context to search for an open- ended user request , wherein second context includes a second set of models, grammar and lexicons (ibid, wherein the open ended request if for the system to “Call mom”, and encompasses the second context, wherein grammar specific function for calling mom is realized, in the new context, more specifically-the personal name of Aardvark-employs it’s own grammar, lexicon and model of device names- which is inherently and undeniably a context, wherein the user must supply

the word Aardvark-wherein in the context is interpreted as the application determination, secondly, the context is inherently switched to a second context (or topic) directly relating to the open ended user request, this second context employs only thereafter a second grammar, model and lexicon which it accesses after the keyword “Aardvark” is determined, see also column C.20.lines 54-57 “After supplying the appliance name, a user is granted access to further commands of the standard VUI operating on the voice controlled device at 601).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-16 and 26-30, and 32-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Junqua et al (Junqua, 6,324,512 B1) in view of Giuliani et al (Giuliani, Hands free Continuous Speech Recognition in Noisy Environment Using a Four Microphone Array) and White et al (White, 6,408,272 B1)

As per claims 1 and 5, Junqua et al teach a natural language interface control system for operating a plurality of devices comprising (figure 1):

"feature extraction module coupled to the first microphone" this signal processing component 68, col. 15, lines 53-67);
"a speech recognition module coupled to the feature extraction module, utilizes hidden Markov models; (His speech recognizer 20, col. 2, lines 35-55, Fig. 4); and

"A device interface coupled to the natural interface module "(His natural language parser 26, col. 2, lines 52-61), "wherein the natural language interface module is for operating a plurality of devices of one or more types that are coupled to the device interface based upon non-prompted, open- ended natural language request from a user" (his abstract, lines 1-5; col. 2, lines 62-67 his unified access controller 30, his digital tuner 40 and his recorder 44, col. 3, lines 9-17, C.2.lines 52-61, C.3.lines 9-17, C.31-35, and Fig. 1, with a plurality of devices, see Fig. 1 his digital tuner and recorder-which is sufficient for disclosure of a plurality of devices of the same type or different types, wherein the user simply "speaks into the

system and the speech recognizer, natural language parser...carry out the user's wishes" with respect to the recorder and digital tuner)

but lacks explicitly wherein the natural language interface module abstracts each of the plurality of devices into a respective one of the different grammars and a respective one of a plurality of lexica corresponding to each of the plurality of devices

However, Geilhufe teaches an interface module abstracts ...each of the plurality of devices (C.17.lines 6-10, C.19.lines 33-37, C.18.lines 1-4- wherein each device has "abstracted", core commands, and commands specific to a given application). Therefore, at the time of the invention, it would have been obvious to modify Junqua's natural language parser and unified access controller with Geilhufe's device specific grammar and lexicon (vocabulary/specific list of commands). The motivation for doing so would have been to each device respond to specific commands appropriately (C.18.lines 1-4, 47-57-wherein "Aardvark call mom" results in calling mom from a desktop phone, by a command definition of call as a specific command to a phone device, and not, for example, a transcription of "Aardvark Call mom" into a document)

It is noted that the Junqua in view of Geilhufe teaches the claimed invention but does not explicitly teach a 3 dimensional microphone array. However, this feature is well known in the art as evidenced by Giuliani et al who teach a four microphone array. Therefore, one of ordinary skill in the art at the time invention was made would have it obvious to substitute the microphone taught by Junqua by the array of microphone taught by Giuliani because it would improve the signal quality in a noisy environment (see Giuliani page 860).

It is further noted that the combination teaches the claimed invention but does not explicitly teach wherein the speech recognition module can switch between different acoustic models and different grammars, wherein at least one of the different acoustic models and at least one of the different grammars is downloaded over a network. However, this feature is well in the art as evidenced by White et al who teach a distributed voice interface system that includes a remote system, which may communicate with a number of local devices where data can be downloaded from the remote system to the local devices at col. 3, lines 25-32 and col. 16, lines 1-15, and teaches having the natural language interface to the speech recognition, C.6.lines 35-40-resident on a VUI abstracting a plurality of

devices, C.4.lines 55-60, C.5.lines 39-54, and C.6.lines 32-55—the natural language through the VUI functions to specific information grammars and lexica from remote locations to operate each of a plurality of local devices, thereby switching grammars, acoustic models, C.14.lines 2-7, “**If local device 14 is not able to respond by itself (e.g., it cannot recognize a user's spoken command) or, alternatively, if a user triggers local device 14 with a “wake up” command, local device 14 initiates communication with remote system 12. Remote ...respectively.**”, in C.17.lines 30-32 “**Such speech may comprise one or more commands in the form of keywords—e.g., “Start,” “Turn on,” or simply “On” which are recognizable by resident VUI 36 of local device**”). Therefore, one having ordinary skill in the art at the time the invention was made would have it obvious to incorporate the combination as taught by Junqua, Geilhufe with Giuliani into a distributed system as taught by White et al because the data already present in each local device can be updated, replaces or supplemented as desired to modify the voice user interface capability (White et al's col. 3, lines 28-34).

As per claim 2, the combination teaches the plurality of devices coupled to the natural language interface module (Junqua figure 1, his

natural language parser 26 and his digital tuner 40 and his recorder 44;
White his speech recognition engine 40 and 70)

As per claim 3, Junqua et al wherein the speech recognition module utilizes an N-gram grammar (col. 7, line 65 to col. 8, line 2).

As per claims 4, Junqua et al wherein the natural language interface module utilizes a Probabilistic context free grammar (figure 1, his natural language parser 26, col. 5. lines 5-11).

As per claims 6-8 (see rejection 1 above) the combination of Junqua, Geilhufe (context switching with respect to “attention word”)

As per claims 9 and 10, (see rejection of claim 1), the combination further teaches a grammar module for storing different grammars for each of the plurality of devices (see Geilhufe, application specific command discussion, also context switching as it relates to “attention words”) and White switches grammars, ..., acoustic models from remote sites, upon receipt of a keyword. Therein searching for the non-prompted open-ended, natural language requests upon the receipt and recognition of an “attention word” or keyword).

As per claims 11-16, the combination teaches wherein the device comprises a wireless device interface (White, col. 2, lines 55-64, col. 5,

lines 39-47),, an external network coupled to the natural language interface (Junqua, his internet access 64); wherein said 3 dimensional microphone array includes the first microphone (see Giuliani, his four microphone array)

7. Claims 26-30, and 32-44 are the same in scope and content as claims 1-16 above and therefore are rejected under the same rationale.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the

mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lamont M. Spooner whose telephone number is 571/272-7613. The examiner can normally be reached on 8:00 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on 571/272-7602. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>.

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10/12/06



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